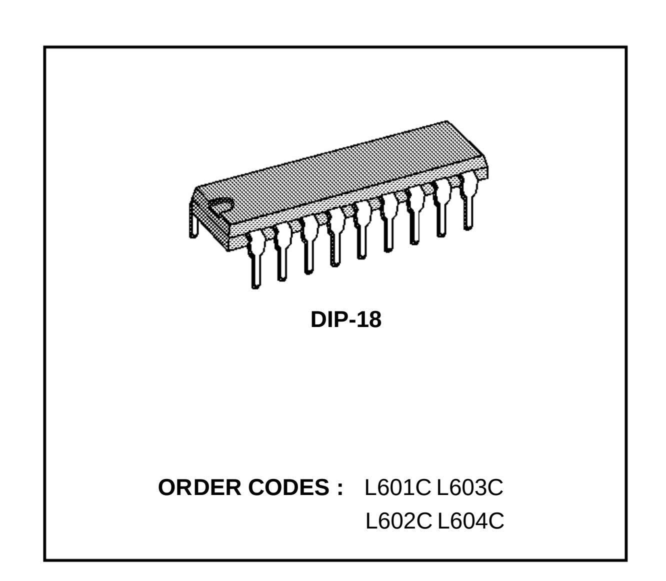
L601-L603
L602-L604

DARLINGTON ARRAYS

- EIGHT DARLINGTONS PER PACKAGE
- OUTPUT CURRENT 400 mA PER DRIVER (500 mA PEAK)
- OUTPUT VOLTAGE 90 V ($V_{CE\ (sus)}$ = 70 V)
- INTEGRAL SUPPRESSION DIODES FOR INDUCTIVE LOADS
- OUTPUTS CAN BE PARALLELED FOR HIGHER CURRENT
- TTL / CMOS / PMOS / DTL COMPATIBLE INPUTS
- INPUTS PINNED OPPOSITE OUTPUTS TO SIMPLIFY LAYOUT



DIP-18

ORDER CODES : L601C L603C
L602C L604C

DESCRIPTION

The L601, L602, L603 and L604 are high voltage, high current darlington arrays each containing eight open collector darlington pairs with common emitters. Each channel is rated at 400 mA and can with stand peak currents of 500 mA. Suppression diodes are included for inductive load driving and the inputs are pinned opposite the outputs to simplify board layout.

The four versions interface to all common logic families:

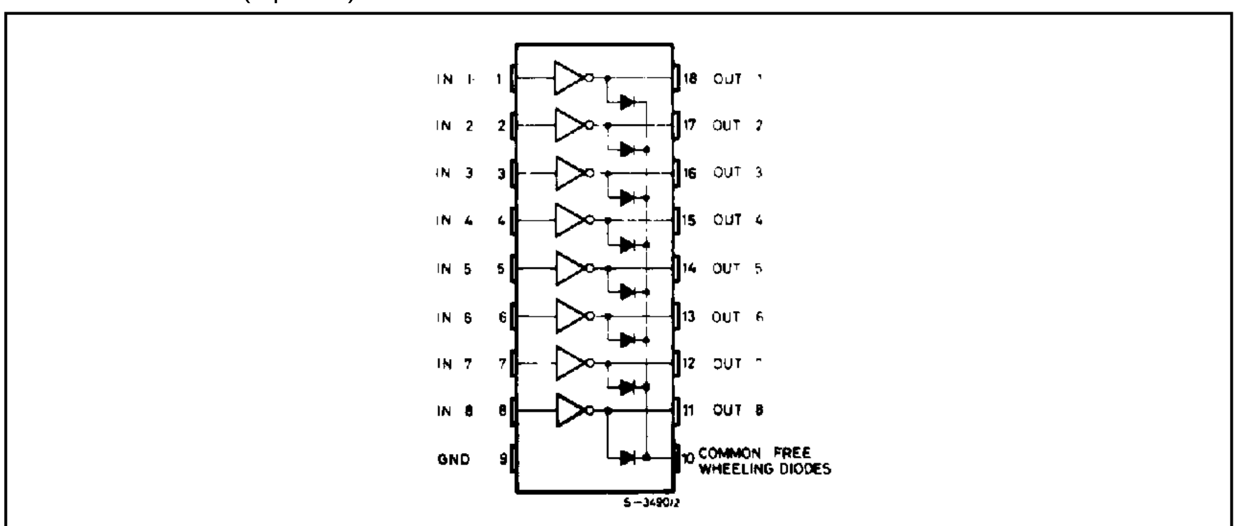
L601	General purpose
L602	14 - 25 V PMOS
L603	5 V TTL
L604	6 - 15 V CMOS

These versatile devices are useful for driving a wide range of loads, including solenoids, relays DC motors, LED displays, filament lamps, thermal printheads and high power buffers.

ABSOLUTE MAXIMUM RATINGS

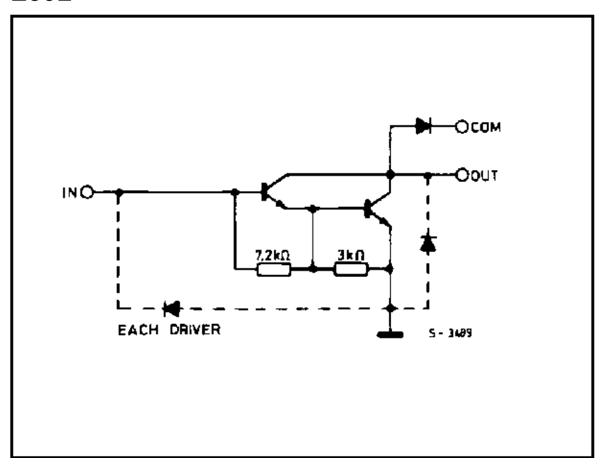
Symbol	Parameter	Value	Unit
V_{CEX}	Collector Emitter Voltage (input open)	90	V
I_C	Collector Current	0.4	A
I_C	Collector Peak Current	0.5	A
V_i	Input Voltage (for L602 L603 and L604)	30	
I_i	Input Current (for L601 only)	25	mA
P_{tot}	Total Power Dissipation a T_{amb} = 25°C	1.8	W
T_{op}	Operating Junction Temperature	-25 to 150	°C

PIN CONNECTION (top view)

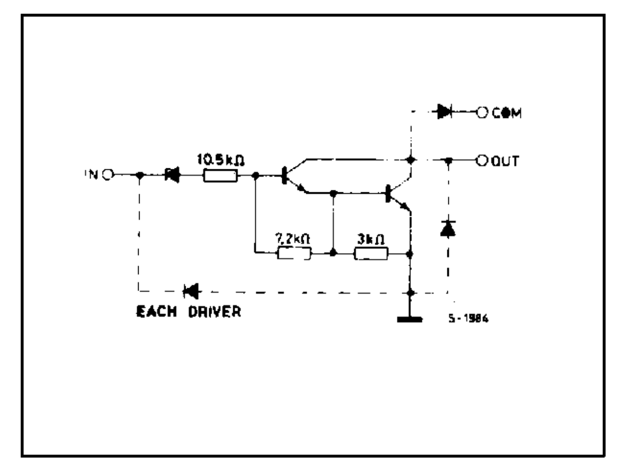


SCHEMATIC DIAGRAMS

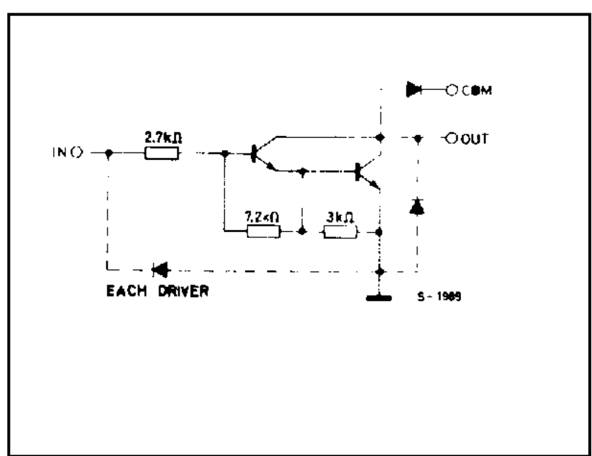
L601



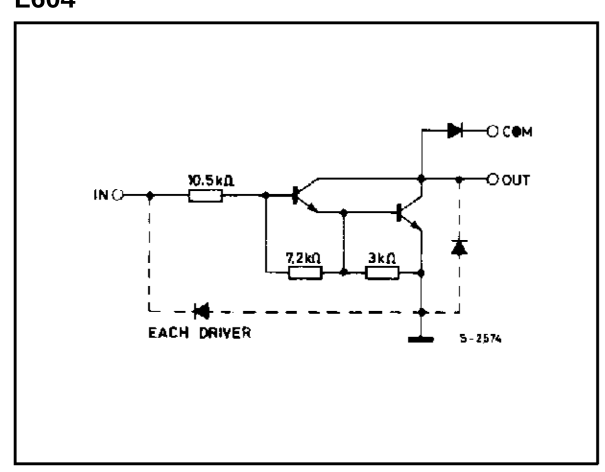
L602



L603



L604



THERMAL DATA

Symbol	Parameter	Value	Unit
$R_{th\text{-}j\text{-}amb}$	Thermal resistance Junction-ambient Max	70	°C/W

ELECTRICAL CHARACTERISTICS (T$_{amb}$ = 25 °C, unless otherwise specified)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CEX}	Output Leakage Current	V_{CE} = 90 V			10	µA
$V_{CE\ (sat)}$	Collector Emitter Saturation Voltage	I_C = 300 mA I_B = 500 µA I_C = 200 mA I_B = µA I_C = 100 mA I_B = 250 µA			2 1.7 1.2	V V V
h_{FE}	DC Forward Current Gain (L601 only)	V_{CE} = 3 V I_C = 300 mA	1000			-
V_i	Minimum Input Voltage (ON condition)	V_{CE} = 3V I_C = 300 mA for L602 for L603 for L604			 11.5 2.5 5	 V V V
V_i	Maximum Input Voltage (OFF condition)	V_{CE} = 90 V I_C = 25 µA for L601 for L602 for L603 for L604	 0.55 7 0.75 1			 V V V V
I_R	Clamp Diode Reverse Current	V_R = 90 V			50	µA
V_F	Clamp Diode Forward Voltage	I_F = 300 mA		2	2.4	V
t_{on}	Turn-on Delay	0.5 V_i to 0.5 V_o		0.4		µs
t_{off}	Turn-off Delay	0.5 V_i to 0.5 V_o		0.4		µs

DIP18 PACKAGE MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
a1	0.254			0.010		
B	1.39		1.65	0.055		0.065
b		0.46			0.018	
b1		0.25			0.010	
D			23.24			0.915
E		8.5			0.335	
e		2.54			0.100	
e3		20.32			0.800	
F			7.1			0.280
I			3.93			0.155
L		3.3			0.130	
Z		1.27	1.59		0.050	0.063

